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ATTORNEY DOCKET NO. 21108.0021U2
PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of

MIN, et al.

Application No. 10/523,343

International Filing Date: July 22, 2003

For: "THIOREDOXIN MUTANTS AND
USES THEREOF"

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Art Unit: Unassigned

Examiner: Unassigned

Confirmation No. 5753

INFORMATION DISCLOSURE STATEMENT

Mail Stop Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

NEEDLE & ROSENBERG, P.C.
Customer Number 23859

Sir:

Pursuant to the requirements of 37 C.F.R. § 1.56, submitted herewith on the accompanying Information Disclosure Statement List is a listing of documents known to Applicants and/or their attorneys. In accordance with 37 C.F.R. §1.98(a)(2), copies of any cited U.S. patent or U.S. patent application publication documents are not enclosed. Copies of any cited foreign patent document and/or any non-patent publication are enclosed.

This Information Disclosure Statement is believed to be filed in a timely manner pursuant to 37 C.F.R. § 1.97(b)(3), in that a first Office Action on the merits of the present patent application has not yet been mailed to Applicants.

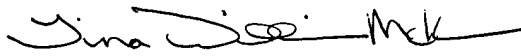
Consideration of the cited documents and making the same of record in the prosecution of the above-referenced application are respectfully requested.

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No fee is believed due; however, the Commissioner is hereby authorized to charge any fees which may be required, or credit any overpayment to Deposit Account No. 14-0629.

Respectfully submitted,

NEEDLE & ROSENBERG, P.C.

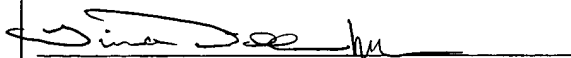


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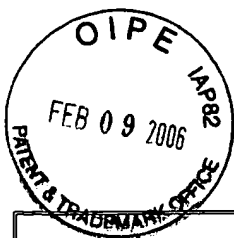
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Tina Williams McKeon

February 7, 2006
Date

**INFORMATION DISCLOSURE
STATEMENT LIST**

(Use as many sheets as necessary)

Complete if Known

Application Number	10/523,343
Filing Date	July 22, 2003
First Named Inventor	Min, et al.
Group Art Unit	Unassigned
Examiner Name	Unassigned

U.S. PATENT DOCUMENTS

Examiner's Initials	Cite No.	Document No.	Date	Name	Class	Subclass	Filing Date (if appropriate)

FOREIGN PATENT DOCUMENTS

Examiner's Initials	Cite No.	Foreign Patent Document Country Code-Number-Kind Code	Date	Name	Translation Yes/No
	A1	WO 91/04320	April 4, 1991	Rosén, et al.	
	A2	WO 98/24472	June 11, 1998	Powis, et al.	

NON-PATENT DOCUMENTS

Examiner's Initials	Cite No.	Non-Patent Citations (include Author, Title, Publisher, Relevant Pages, Date and Place of Publication)
	A3	Baker, A. et al., Thioredoxin, a Gene Found Overexpressed in Human Cancer, Inhibits Apoptosis in Vitro and in Vivo, Cancer Research, Volume 57, No. 22, 5162-67, 1997
	A4	Berggren, M., et al., Thioredoxin and Thioredoxin Reductase Gene Expression in Human Tumors and Cell Lines, and the Effects of Serum Stimulation and Hypoxia, AntiCancer Research, Volume 16, No. 6B, 3459-66, November – December 1996
	A5	Bishopric NH, Webster KA. Preventing apoptosis with thioredoxin: ASK me how. Circ Res. 2002 Jun 28;90(12):1237-9.
	A6	Chang, H.Y., Activation of Apoptosis Signal-Regulation Kinase 1 (ASK1) by the Adapter Protein Daxx, Science, Volume 281, Issue 5384, 1860-63, September 18, 1998
	A7	Davis, Signal transduction by the JNK group of MAP kinases. Cell 2000;103:239-252
	A8	Filatov, V.L., et al., Troponin: Structure, Properties, and Mechanism of Functioning, Biochemistry, Volume 64, No. 9, 969-85, September 1, 1999
	A9	Gallegos, A., et al., Transfection With Human Thioredoxin Increases Cell Proliferation and a Dominant-Negative Mutant Thioredoxin Reverses the Transformed Phenotype of Human Breast Cancer Cells, Cancer Research, Volume 56, No. 24, 5765-70, 1996
	A10	Garcia-Cardena, G., et al., Dynamic Activation of Endothelial Nitric Oxide Synthase By Hsp90, Nature Volume 392, No. 6678, 821-4, April 23, 1998
	A11	Gasdaska, J.R., et al., Cell Growth Stimulation by the Redox Protein Thioredoxin Occurs By a Novel Helper Mechanism, Cell Growth and Differentiation, Volume 6, No. 12, 1643-50, December, 1995
	A12	Gotoh, Y., et al., Reactive Oxygen Species-and Dimerization-induced Activation of Apoptosis Signal-regulating Kinase 1 in Tumor Necrosis Factor- α Signal Transduction, Journal of Biological Chemistry, Volume 273, No. 28, 17477-82, July 10, 1998
	A13	Green, Apoptotic pathways: paper wraps stone blunts scissors. Cell 2000;102:1-4
	A14	Haimovitz-Friedman, A., et al., Lipopolysaccharide Induces Disseminated Endothelial Apoptosis Requiring Ceramide Generation, Journal of Experimental Medicine, Volume 186, No. 11, 1831-41, December 1, 1997

**Examiner
Signature:****Date Considered**

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

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		Filing Date	July 22, 2003
		First Named Inventor	Min, <i>et al.</i>
		Group Art Unit	Unassigned
		Examiner Name	Unassigned
	A15	Hannon, G.J., RNA Interference, Nature, Volume 418, No. 6894, 244-51, July 11, 2002	
	A16	Hatai, T., et al., Execution of Apoptosis Signal-Regulating Kinase 1 (ASK1)-Induced Apoptosis by the Mitochondria-dependent Caspase Activation, Journal of Biological Chemistry, Volume 275, No. 34, 26576-81, August 25, 2000	
	A17	Hengartner, M.O., The Biochemistry of Apoptosis, Nature, Volume 407, No. 6805, 770-6, October 12, 2000	
	A18	Holmgren, A., Thioredoxin and Glutaredoxin Systems, Journal of Biological Chemistry, Volume 264, No. 24, 13963-66, August 25, 1989	
	A19	Holmgren, Thioredoxin. <i>Annu Rev Biochem.</i> 1985;54:237-271	
	A20	Ichijo, H., et al., Induction of Apoptosis by ASK1, a Mammalian MAPKKK That Activates SAPK/JNK and p38 Signaling Pathways, Science, Volume 275, No. 5296, 90-94, January 3, 1997	
	A21	Ichijo, H., From Receptors to Stress-Activated MAP Kinases, Nature, Volume 18, No. 45, 6087-93, November 1, 1999	
	A22	Ip, Y.T., et al., Signal Transduction by the c-Jun N-terminal Kinase (JNK)—From Inflammation to Development, Current Opinions in Cell Biology, Volume 10, No. 2, 205-19, April 1, 1998	
	A23	Laney, J., et al., Substrate Targeting in the Ubiquitin System, Cell, Volume 97, 427-30, May 14, 1999	
	A24	Liu, H., et al., Activation of Apoptosis Signal-Regulating Kinase 1 (ASK1) by Tumor Necrosis Factor Receptor-Associated Factor 2 Requires Prior Dissociation of the ASK1 Inhibitor Thioredoxin, Molecular and Cellular Biology, Volume 20, No. 6, 2198-2208, March 2000	
	A25	Liu, Y., et al., Laminar Flow Inhibits TNF-induced ASK1 Activation by Preventing Dissociation of ASK1 From Its Inhibitor 14-3-3, Journal of Clinical Investigation, Volume 107, No. 7, April 2001	
	A26	Liu, Y., et al., Thioredoxin Promotes ASK1 Ubiquitination and Degradation to Inhibit ASK1-Mediated Apoptosis in a Redox Activity-Independent Manner, Circulation Research, Volume 90, 1259-66, May, 2002	
	A27	Min, W., et al., TNF Initiated E-Selectin Transcription in Human Endothelial Cells Through Parallel TRAF-NF-Kappa B and TRAF-RAC/CDC42-JNK-c-Jun/ATF2 Pathways, Journal of Immunology, Volume 159, No. 7, 3508-18, 1997	
	A28	Moulton, K., et al., Angiogenesis Inhibitors Endostatin or TNP-470 Reduce Intimal Neovascularization and Plaque Growth in Apolipoprotein E-Deficient Mice, Circulation, Volume 99, 1726-32, December, 1999	
	A29	Naldini, L., et al., Efficient Transfer, Integration, and Sustained Long-term Expression of the Transgene in Adult Rat Brains Injected With A Lentiviral Vector, Proc. Natl. Acad. Sci, Volume 93, 11382-88, October, 1996	
	A30	Nishitoh, H., et al., ASK1 is essential For JNK/SAPK Activation by TRAF2, Molecular Cell, Volume 2, No. 3, 389-95, September 1, 1998	

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	A31	Noland, T.A., et al., Protein Kinase C Phosphorylation of Cardiac Troponin I and Troponin T Inhibits Ca(2+)-stimulated MgATPase Activity in Reconstituted Actomyosin and Isolated Myofibrils, and Decreases Actin-myosin Interactions, Journal of Molecular and Cell Cardiology, Volume 25, No. 1, 53-65, January 1, 1993	
	A32	Poppa, V., et al., Endothelial NO Synthase Is Increased in Regenerating Endothelium After Denuding Injury of the Rat Aorta, Arterioscler. Thromb. Vasc. Biol., Volume 18, 1312-21, March, 1998	
	A33	Powis, G., et al., "Selenium and the Thioredoxin Redox System: Effects on Cell Growth and Death, Oncology Research, Volume 9, No. 6-7, 303-12, 1997	
	A34	Powis, D., et al., The Role of the Redox Protein Thioredoxin in Cell Growth and Cancer, Free Radic. Biol. Med., Volume 29, No. 3-4, 312-22, August 1, 2000	
	A35	Saitoh, M., et al., Mammalian Thioredoxin is A Direct Inhibitor of Apoptosis Signal-regulating Kinase (ASK) 1, EMBO Journal, Volume 17, No. 9, 2596-2606, 1998	
	A36	Sayama, K., et al., Apoptosis Signal-regulating Kinase 1 (ASK1) Is An Intracellular Inducer of Keratinocyte Differentiation, Journal of Biological Chemistry, Volume 276, No. 2, 999-1004, January 12, 2001	
	A37	Sheu, S., et al., Measurement of Cytosolic Free Calcium Concentration in Isolated Rat Ventricular Myocytes with Quin 2, Circ. Res., Volume 55, 830-4, 1984	
	A38	Simpson, P. et al., Differentiation of Rat Myocytes in Single Cell Cultures With and Without Proliferating Nonmyocardial Cells, Circ. Res., Volume 50, No. 1, 101-16, January, 1982	
	A39	Slowik, M.R., et al., Evidence That Tumor Necrosis Factor Triggers Apoptosis in Human Endothelial Cells by interleukin-1-Converting Enzyme-Like Protease-Dependent and -Independent Pathways, Lab Invest., Volume 77, No. 3, 257-67, September 1, 1997	
	A40	Sugden, P.H., et al., "Stress-Responsive" Mitogen-Activated Protein Kinases (c-Jun N-Terminal Kinases and p38 Mitogen-Activated Protein Kinases) in the Myocardium, Circ. Res., Volume 83, 345-52, 1998	
	A41	Takeda et al., Apoptosis signal-regulating kinase 1 (ASK1) induces neuronal differentiation and survival of PC12 cells.	
	A42	Tobiume, K. et al., ASK1 is Required For Sustained Activations of JNK/p38 MAP Kinases and Apoptosis, EMBO Reports, Volume 2, No. 3, 222-28, 2001	
	A43	Tournier C. et al., Requirement of JNK for stress-induced activation of the cytochrome c-mediated death pathway. <i>Science</i> . 2000;288:870-874	
	A44	Treier, M., et al., Ubiquitin-dependent c-Jun Degradation in Vivo is Mediated by the Delta Domain, Cell, Volume 78, No. 5, 787-98, September 9, 1994	
	A45	Yin, G., et al., Endostatin Gene Transfer Inhibits Joint Angiogenesis and Pannus Formation in Inflammatory Arthritis, Mol. Ther., Volume 5, No. 5 Pt 1, 547-54, May 1, 2002	
	A46	Yuasa, K. et al., A Novel Interaction of cGMP-dependent Protein Kinase I With Troponin T, Journal of Biological Chemistry, Volume 274, No. 52, 37429-34, December 24, 1999	

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	A47	Zhang, L., et al., Suppression of Apoptosis Signal-regulating Kinase 1-induced Cell Death by 14-3-3 Proteins, <i>Proc. Natl. Acad. Sci.</i> , Volume 96, 8511-15, July, 1999	
	A48	Zhang et al., Hsp-90-Akt phosphorylates ASK1 and inhibits ASK1-mediated apoptosis, <i>Oncogene</i> . 2005 Jun 2;24(24):3954-63.	
	A49	Zhang et al., PKD specifically mediates ASK1-JNK signaling induced by H ₂ O ₂ , but not TNF. <i>J Biol Chem</i> . 2005 May 13;280(19):19036-44	
	A50	Zhang et al., Thioredoxin-2 inhibits mitochondria-located ASK1-mediated apoptosis in a JNK-independent manner, <i>Circulation Res</i> , 2004; 94:1483-1491	

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